

Wireless—With Strings Attached

Cities Building Wi-Fi Networks Are Running Into Hurdles, Including Mounting Costs

BY AMOL SHARMA

IN RECENT YEARS, dozens of U.S. cities and towns have announced plans to build Wi-Fi networks that would give their citizens a cheap and convenient way to access high-speed Internet and provide new competition to phone and cable companies.

Now some of those projects are running into hurdles. Constructing networks that can provide Internet access to homes and office buildings and withstand challenges from nature that interfere with wireless signals—such as hills or rainstorms—is proving more costly than anticipated. Some Wi-Fi projects, such as Philadelphia's, are running 30% or more over budget. Many cities are discovering the true costs of the initiatives only as they begin to roll out infrastructure and test the networks. Consumer demand for the services, meanwhile, has been soft in the early going. (See related article, page B3)

Companies such as EarthLink Inc. and MetroFi Inc. have been increasingly taking the lead on building and operating these networks for cities. But as the economics of the industry get tougher, the companies are asking cities to bear more of the financial burden, either by contributing cash toward construction or by agreeing to purchase Wi-Fi services for government workers.

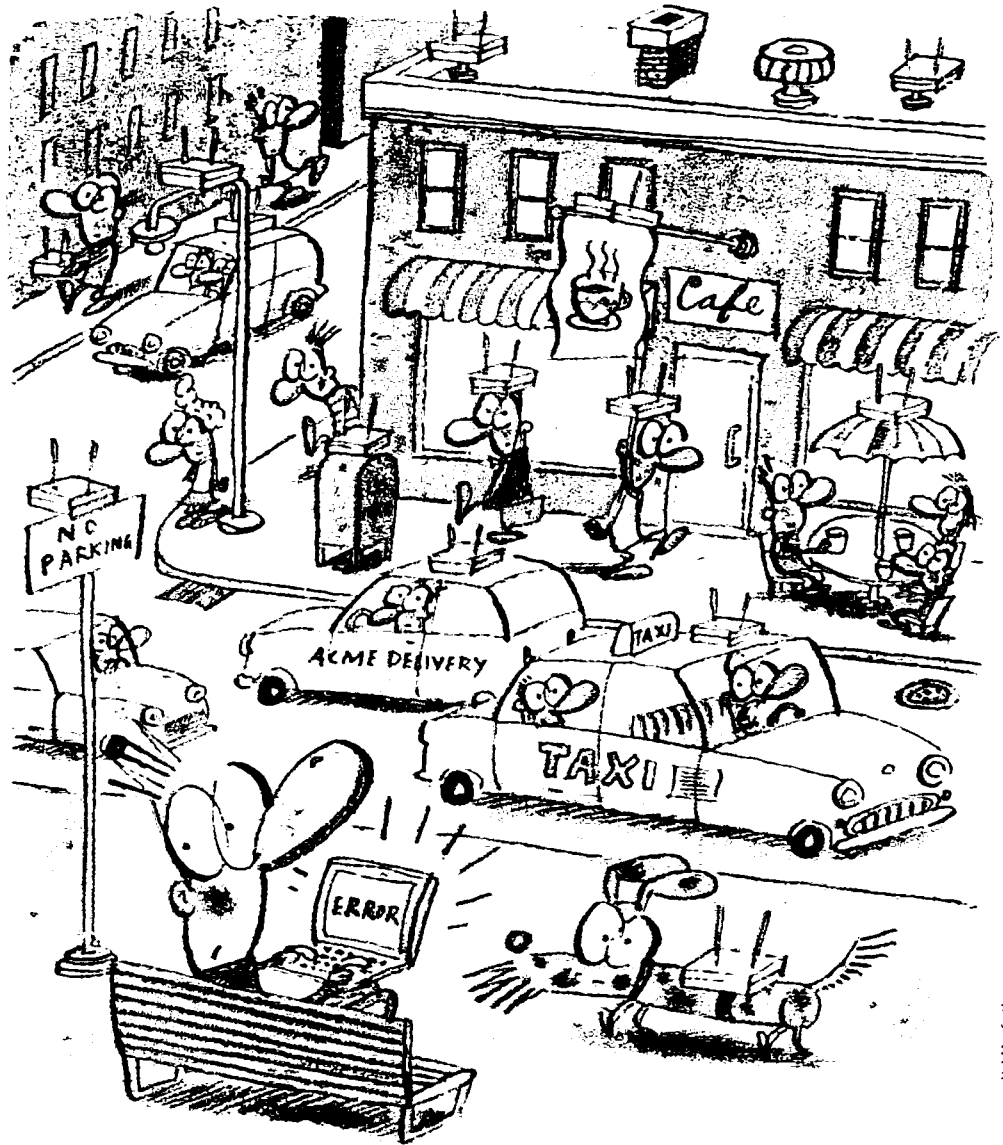
"This is a new and emerging industry, and the business model is still evolving," says MetroFi Chief Executive Chuck Haas. Mr. Haas says MetroFi, which specializes in designing and building Wi-Fi networks for metropolitan areas, now requires cities to contribute a substantial amount of capital before agreeing to new projects.

It isn't just financial issues that are plaguing Wi-Fi initiatives. In San Francisco, an array of politicians and civic groups have criticized the city's deal with Google Inc. and EarthLink, primarily a provider of landline Internet access, to create a Wi-Fi network. The critics cite privacy concerns, poor economics for the city, and even the potential that radiation from Wi-Fi equipment could have harmful health effects. Following a standoff with the city's board of supervisors, the mayor, who had proposed the idea of a citywide Wi-Fi network, placed the issue onto a November ballot.

An EarthLink spokesman said the company remains in discussions with the city on how to move forward with the project.

"We continue to hope that EarthLink and the City of San Francisco will find a way to enable all its residents to enjoy the free Wi-Fi network they deserve," said a Google spokesman. "We believe that ballot initiative is a great opportunity for San Franciscans to express their support for free wireless access for all."

The municipal Wi-Fi movement is far from dead. More than 90 cit-



Hal Mayforth

ies and towns, including Portland, Ore., Corpus Christi, Texas, and others, have already launched service, according to MuniWireless.com, a Web site that tracks the projects nationally. Nationwide spending on municipal Internet projects was \$236 million last year, up from \$117 million in 2005, and is expected to nearly double this year, the organization said. Wi-Fi technology, generally, is gaining popularity. Consumers are increasingly accessing the Web at hotspots like coffee shops and airport lounges. And they are doing so not just from laptops, but also from new mobile devices like Apple Inc.'s iPhone.

But municipal networks aren't on track to offer consumers a cheaper high-speed alternative to the powerful U.S. phone and cable companies, as some backers once envisioned.

Proponents of municipal wireless networks say cities and Wi-Fi companies are learning lessons from the early setbacks and are adapting. Initially, cities funded their projects out of their own budgets. That

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More Cities Face Wi-Fi Hurdles

Continued from the front page

proved controversial, as telecom operators argued that it smacked of the government competing with the private sector. Now many cities are contracting out the work of building and operating the network to companies like EarthLink and MetroFi, which team up with Wi-Fi equipment providers like Tropos Networks Inc., Motorola Inc. and Belair Networks. In many cases, the

only thing cities are offering the companies in such deals are the rights to hang hundreds or thousands of small Wi-Fi transponders on public property such as lightpoles and traffic lights.

That model isn't holding up. The Wi-Fi companies envisioned being able to offer subscription service to consumers at rates that were significantly cheaper than phone and cable broadband. But the unexpectedly high costs of building Wi-Fi networks—the price tag can easily run into the tens of millions for a big city—coupled with lower

prices for broadband from some phone companies, has made it tougher for consumer Wi-Fi to be competitive. For example, EarthLink offers Wi-Fi for about \$20 a month, a price that is on par with the lower-end Internet services now offered by AT&T Inc. and Verizon Communications Inc.

At the end of the second quarter, EarthLink had only about 4,000 subscribers from its rollouts in Philadelphia, Anaheim, Calif. and Corpus Christi. The company, which is operating under new leadership after the death of former Chief Executive Garry Betty early this year, said in late July it would pull back on further investments in Wi-Fi until it negoti-

ates better deals with cities. In particular, the company wants a commitment by cities to become a significant customer, or "anchor tenant," and thereby guarantee EarthLink a steady revenue stream. "The Wi-Fi business, as currently constituted, will not provide an acceptable return" for EarthLink shareholders, said newly installed Chief Executive Rolla Huff on a recent conference call with analysts.

Mountain View, Calif.-based MetroFi has also signaled that it is only interested in projects where cities are a major customer. While the company has faith in its model of providing free Internet service to consumers supported by ads, that model "has to work in conjunction with other revenue streams," Mr. Haas says.

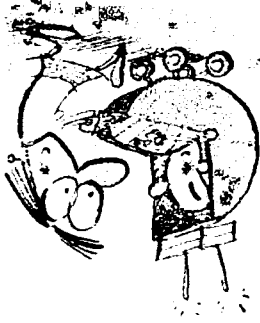
Esme Vos, who runs the MuniWiireless site, says the pressure on cities to use the networks for government services is healthy. "It forces the cities to sit down and think about what they want

Encountering Static

U.S. cities have faced many hurdles with deployment of Wi-Fi. Selected problem areas include:

- Philadelphia EarthLink spent 30+ more than expected on network to guarantee good coverage city-wide.
- Anchorage, Alaska City canceled the project after it couldn't meet MetroFi's financial demands.
- Toledo, Ohio City is reworking its proposal after local opposition to the financing plan.
- Minneapolis US Internet Corp. increased spending by about 25% to make sure Wi-Fi signals get through trees.
- San Francisco Issue is on November ballot after political controversies ranging from privacy to city ownership.

Illustration: Hal Mayforth



to do with the networks," she says. "They actually have to come up with a business plan." In many cases, says Ms. Vos, public-safety workers are a natural user base. Policemen could use the service to download mug shots of suspects in their vehicles, while firefighters could get blueprints of burning buildings. In some cases, Wi-Fi could be used to let government workers telecom-

Some big cities, like Minneapolis, are already signing those kind of "anchor-tenant" agreements. But for many cities with tight budgets, bearing costs for the projects isn't easy. In July, the city of Anchorage, Alaska pulled out of its deal with MetroFi after the company demanded the government pay a fee for network usage. Toledo, Ohio, originally struck a deal with MetroFi and agreed to put in financing worth \$4.3 million. MetroFi would offer consumers free Internet service supported with ads and provide access for public safety workers. But some local politicians and citizens balked at the deal, saying the city couldn't afford it.

Now, the Toledo plan is being reworked. Todd Davies, Toledo's commissioner of development, says the new proposal would reduce the city's contribution to \$1.5 million by tapping resources already budgeted to public-safety agencies and taking advantage of a federal grant the city has received from the Department of Homeland Security. The city council still has to approve the plan.

Craig Settles, a consultant to cities and companies on municipal-wireless initiatives, says cities that are just now drawing up plans for Wi-Fi are doing so more cautiously. Mr. Settles is advising Glendale, Calif., on its project. Before the city issues a request for proposals from bidders, it is conducting a study to determine which businesses, government workers, and members of the medical community could use the network. The goal is to make sure there will be demand for the Wi-Fi service before the city commits to anything.

"The cities that didn't join the rush last year are taking it slower and are being much more thorough in their analysis," Mr. Settles said. —Bobby White and Kevin J. Delaney contributed to this article.

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TRIBUNE EXCLUSIVE

City disconnecting from Wi-Fi vision

By Jon Van

Tribune staff reporter

August 28, 2007

Chicago is curtailing its digital dreams, deciding to back away from municipal Wi-Fi service after failing to reach agreement with either of two companies that sought to build a wireless Internet network in the city.

The move comes as municipal broadband wireless projects around the country face difficulties, and EarthLink Inc., a major player in the field, is re-evaluating its future in municipal Wi-Fi.

As envisioned in early 2006, Chicago was expected to become one of the first big cities in the country to blanket its streets and neighborhoods with a wireless Internet signal that would allow residents access to the Web in their homes and wherever they traveled in the city.

But technology is advancing and the cost of online access for consumers is declining so dramatically that Chicago has other avenues to promote more use of the Internet. As a result, the Wi-Fi deal lost luster when negotiations bogged down, according to sources close to the matter.

Chicago officials had intended that the city would offer infrastructure, but no cash, to a carrier that would use its own funds to build the network here. EarthLink and AT&T Inc. submitted proposals to the city, but after months of negotiations the parties were unable to reach agreement.

The companies sought a commitment from Chicago to be an "anchor tenant," agreeing to pay to use the Wi-Fi network to support city services, but the city declined.

Taking its proposal request off the table for re-evaluation "is entirely appropriate for the city," said Tom Hulsebosch, vice president of municipal sales for EarthLink. "We're seeing this evolve as we learn more about these networks, and the city needs to think about this again from its own business perspective."

It might be possible for the city to spend money on Wi-Fi services that it now spends on other communications, he said, but that would require rethinking the budget.

A few years ago when San Francisco, Philadelphia, Houston and other cities jumped into Wi-Fi, officials thought paying less than \$20 a month to get a high-speed Internet connection anywhere in the city would find a lot of takers. They also thought advertising could support citywide free connections.

Results on both scores have been generally disappointing. In Lompoc, Calif., which activated its \$2 million Wi-Fi network almost a year ago, the city signed up fewer than 500 users out of a population of more than 40,000.

"There's a serious dose of reality, much needed, that has come into play after all the hype last year about free, ad-driven Wi-Fi," said Craig Settles, a wireless business strategist and consultant based in Oakland.

The most successful municipal Wi-Fi networks are those devoted to improving public safety and other city services, Settles said. Helping less-affluent residents get fast Internet access also can be a goal, he said, but it requires much more than just firing up a wireless network. Getting computers and training for the poor is a greater challenge, he said.

"We think that municipal services and public safety are at the sweet spot for a Wi-Fi network," said Blair Klein, a Chicago-based spokeswoman for the company. She said anchor tenancy has been a key point for the company in all its discussions of municipal Wi-Fi.

A primary goal of Chicago's request for proposals to build a wireless network was to assure that all city residents had high-speed Internet access at affordable prices. Municipal Wi-Fi was one aspect of that goal, but getting hardware, software and training to city residents is also necessary, said a city official, who spoke on condition of anonymity because an official announcement is not scheduled until Tuesday.

The city already provides free Internet access at 79 public libraries and at public spaces like Millennium Park and Daley Plaza and will seek other ways to expand access, he said.

A Wi-Fi network intrigued Chicago as a low-cost method of blasting an Internet signal across the city. The system would deploy radio equipment mounted on light poles and would cover 220 square miles of territory. Industry sources have estimated that it could cost as much as \$50 million to install the infrastructure and perhaps an additional \$150 million to operate the system for six years.

Chicago never intended to be a leader in municipal Wi-Fi, said a city official, preferring instead to watch what happened in other cities and learn from that. Some of what's happening isn't pretty.

In San Francisco, bickering among elected officials has stalled progress for months. In Houston, where the city council approved a contract with EarthLink last spring, work on the project has yet to start.

As municipal wireless projects have hit one snag after another, prices for wired Internet have fallen. AT&T charges \$20 a month for speeds of 1.5 megabits a second in Chicago and will provide connections half that fast for \$10 to new subscribers, although more than 10 percent of residences in the metropolitan area cannot get digital subscriber line service because they are located too far from AT&T's switching centers.

Even if Chicago declines to back a municipal wireless network, city residents soon will gain more Internet connection options. Sprint Nextel Corp. is building a wireless WiMax network here that is due to offer service next spring. WiMax is a technologic cousin to Wi-Fi intended to cover miles of territory with a wireless Internet signal via radio spectrum, whereas Wi-Fi transmits hundreds of feet per transmitter.

Another new wireless network may be built in 2009 after a portion of spectrum now used for analog television broadcasts becomes available for Internet connections.

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Stuck on the ground

Municipal wireless projects have faced problems across the country:

*In San Francisco, progress has been stalled for months as elected officials bicker.

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Is Wi-Fi a losing strategy?

As providers struggle with costs, cities and companies are backing out

By DARRYL ENRIQUEZ and LARRY SANDLER

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Posted: Sept. 2, 2007

Wi-Fi, once hyped as the technology that could provide wireless Internet access to personal and business computers across urban America, is in deep trouble here and around the country.

In many cities, Wi-Fi projects are dead or faltering, saddled with growing equipment expenses, reception problems and little interest by governments in pumping tax money into them.

Unreliable business plans of prospective Wi-Fi firms, mounting expenses and undependable technology have delayed some projects or led wireless providers to walk away from others. Some experts are advising local governments to drop their involvement with Wi-Fi and leave the venture of wireless Internet solely in the hands of private industry.

An announcement from EarthLink Inc. last week that it was cutting back on its Wi-Fi business led San Francisco, Houston and Chicago to back out of their deals with the firm.

Chicago officials also said they were dropping their plan to blanket the city with wireless broadband Internet service because it would be too costly and too few residents would use it.

Milwaukee's plans to build a citywide Wi-Fi system have run into repeated delays, and several deadlines have been missed.

Testing continues on the network's "demonstration area," on the city's near west side, but it could be several more weeks before that part of the network is available to the public, said Nik Ivancevic, a partner in Midwest Fiber Networks, which is building Milwaukee's \$20 million Wi-Fi system at its own expense.

Trouble in Waukesha

In Waukesha, officials on Tuesday are expecting a report from Colorado Wi-Fi firm RITE Brain, which built and tested a trial transmission network on the city's north side. An early run uncovered enough problems to raise concerns about the project's viability there.

Hilly terrain, weak signal penetration and transmissions that bounce like radar signals off tree leaves are some of the technical problems experienced with Wi-Fi in Waukesha and elsewhere.

As Wi-Fi experiments in other cities progress, providers are saying they need public financing to continue work on the networks.

"The original cost estimates were low, but when the project dealt with issues of topography and the size of the city, the expenses increased," said Waukesha Ald. Joan Francoeur, who as chairwoman of that city's technology committee has watched the Wi-Fi experiment in her community since February of last year.

Even in communities where Wi-Fi has gained footholds - including Corpus Christi, Texas; Minneapolis; Philadelphia; and Portland, Ore. - Internet providers are talking about asking for more government money.

In Chicago, EarthLink Inc. wanted massive public financing for a Wi-Fi system, said city officials there.

Increasingly, major Internet companies won't even open Wi-Fi negotiations with a city unless the municipal government either invests in building the infrastructure or - as in Minneapolis and St. Louis - agrees to pay for using the network for a big chunk of city business, said Randy Gschwind, Milwaukee's chief information officer.

Milwaukee has done neither.

Wi-Fi companies originally expected to offer wireless Internet service at lower rates than conventional wired service, Gschwind said. But in the years since those plans were developed, wired service has become less expensive and faster than wireless, and it works better inside buildings, he said.

As a result, Midwest Fiber executives told Milwaukee aldermen July 18 that it was possible the company could walk away from the deal if it is not financially viable.

But the company is not at that point yet, said Midwest Fiber's Ivancevic. The company is committed to opening the network in the demonstration area and then taking some time to assess consumer reaction and demand before deciding whether to move forward with expanding the network citywide, he said.

Enlisting a partner

Midwest Fiber has found a major national partner to be the network's Internet service provider, but cannot disclose the other company's identity until the demonstration area is opened to the public, Ivancevic said.

Most of the Milwaukee antennas are mounted on We Energies utility poles. By contrast, the St. Louis Wi-Fi network has been delayed because antennas were mounted on streetlights, but engineers haven't figured out how to power the antennas when the lights are off, various media are reporting.

Charging the provider?

Waukesha could face the same dilemma over streetlights that automatically turn off and whether the city charges the wireless firm for the use of electricity, according to Don Shelley, a longtime ham radio operator and member of the committee exploring the Wi-Fi project in Waukesha by RITE Brain.

Shelley said some Wi-Fi firms are insisting that local governments become "anchor tenants" of the system, in the same sense that malls need anchor stores to attract customers and generate guaranteed revenue.

Neither Francoeur nor Shelley would comment about the future of Waukesha's RITE Brain project, but both agreed that Wi-Fi is likely to become an entrepreneurial venture, as opposed to one that strikes a partnership with governments.

Many homes and small businesses, such as coffee shops and taverns, run Wi-Fi for their customers.

Francoeur said the service likely would take hold if small groups of businesses come together to provide Wi-Fi in about a 10-square-block area.

Shelley said that if RITE Brain continued its work in Waukesha, it would be done at the firm's expense. City help would be limited to locating high spots to situate transmitters on light poles and traffic signals.

But that approach "is proving to be untenable in other places," said Milwaukee's Gschwind. "Companies don't believe any more they can make money with this business model."

The Associated Press contributed to this report.

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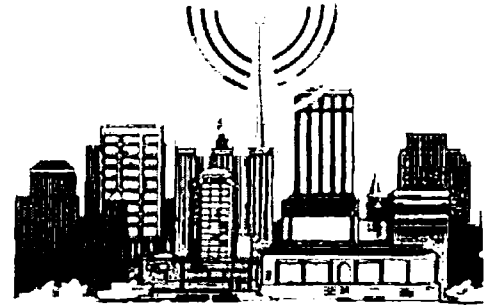
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Thursday, August 30, 2007

Muni WiFi: Not Dead Yet

posted by Christopher Swope

Two bits of news have some media outlets putting municipal WiFi on life support. First, Chicago scrapped its plans for pushing citywide wireless internet access. Then Earthlink, muni WiFi's dominant vendor and biggest cheerleader, announced huge layoffs. Among those leaving the company is Don Berryman, who headed up Earthlink's muni WiFi division.



Does this mean muni WiFi is dead? Not exactly. Rather, what's dying is the dream that cities could reap the benefits of vast wireless networks for free.

Earthlink used to think that it could build and maintain citywide WiFi networks by charging consumers around \$20 a month to use them. That mod might have worked a few years ago when broadband access was sketchy and couldn't be found for less than 50 bucks. Not anymore. John Martin, the editor of Governing.com, tells me that it costs him less to get basic but reasonably fast DSL service at his house in the Massachusetts boondocks than it does to order a pizza. What Earthlink now admits is what many people have said all along: when it comes to WiFi, there simply aren't enough paying customers to float the boat for everyone else.

For cities, the end of something-for-nothing thinking is probably a good thing. Consumer access and vague notions about WiFi somehow fostering economic development were always the worst arguments for wireless anyway. The best argument for WiFi, as I wrote in Governing's May cover story, is that wireless might actually help government provide services better or more cheaply.

That was how Corpus Christi, Texas, got into WiFi. It wasn't because they fell for the latest vendor pitch or got caught up in the constantly changing business models of the WiFi business. Rather, they had a problem -- reading

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water meters was a time- and labor-intensive job -- and automated meter reading using WiFi was a way to do it faster and cheaper. In other words, Corpus Christi viewed wireless as an investment that would pay dividends in the form of government efficiency. The city later opened the network up to consumers but that was never the point. (Ironically, Corpus, which built out WiFi on its own, later sold its network to Earthlink -- I hope they cashed the check!)

Here are two more lessons from Corpus that I think resonate now. First, Corpus didn't go into WiFi because they thought WiFi was cool. They went that path because it was the best technology available at the time to solve their meter reading problem. With new technologies like WiMax coming along, WiFi's days may be numbered. By building a business case around wireless, rather than a fascination with any one technology that happens to be popular with consumers at the moment, cities can shield themselves a bit from the usual problems with obsolescence.

Second, Corpus built its network on its own. Not every city will want to do that, of course--or have a few million bucks in the bank to pay for it. But it can be done. As vendors in this business come and go and change their tune by the month, that's something worth remembering.

Posted by Christopher Swope in [Broadband & Telecom](#) | [Permalink](#)

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"Second, Corpus built its network on its own. Not every city will want to do that, of course--or have a few million bucks in the bank to pay for it. But it can be done. As vendors in this business come and go and change their tune by the month, that's something worth remembering."

Well said. Any city or county that can't or--more likely--won't come up with the up-front investment (even a 50/50 split with a vendor) either doesn't understand the business case or doesn't actually want to save money in the provision of services. It's just that simple.

Posted by: Chris Dixon | Tuesday, September 04, 2007 at 09:56 AM

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